

Dragging a PPSH 1941 submachine gun, Russian officer instructs his men in Indian-style approach technique (Sovfoto)

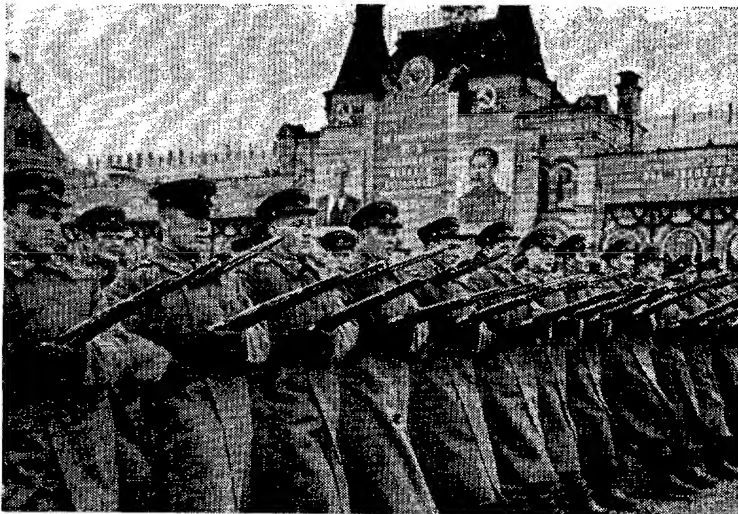
Omnipresent PPSH 1941 and a ground-modified DT Degtyarov in World War II service. Note cruciform carrier on table holding biped legs of Degtyarov (Sovfoto)



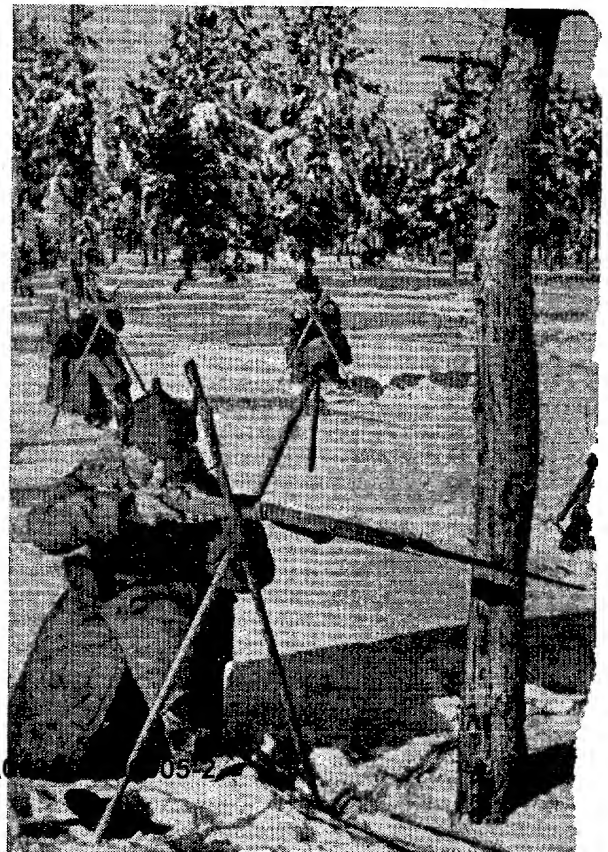
Russian

SMALL ARMS

The army of the Soviet Union is equipped with reliable, functional weapons, including several which are the ultimate in small arms simplicity



Tokarev 1940 rifles of both patterns were seen in Revolution parade of 1948 (Sovfoto)



Men of Siberian ski battalion (Yakutsk) shooting 1891/30 Mosin-Nagants equipped with long bayonet (Sovfoto)



IN THE SOVIET concept of warfare, the function of the army is to advance until the battle is decided. Closely supported by artillery and tanks, Russian infantry is expected to advance without halting until the entire depth of enemy positions has been penetrated. Heavy artillery fire precedes an attack. Tanks fight side by side with the infantry, over-running centers of heavy resistance and punching holes into enemy lines through which the infantry can advance. The Soviet army is geared to overrun an enemy.

A Soviet infantry division of 9,300 men is made up of three infantry regiments, one artillery regiment, one anti-tank group, one battalion of engineers, and one communications company. Each infantry regiment consists of nine rifle companies, one company of submachinegunners, one gun battery, one anti-tank battery of six weapons, one detachment of 27 anti-tank rifles, one mortar company, and one pioneer company.

The infantry is armed with three shoulder weapons: the 1891/30 Moisin-Nagant bolt-action rifle, the Simonov model 36 semiautomatic rifle, and the Tokarev model 40 semiautomatic rifle. The 1891/30 is a version of an action which is over sixty years old. The Simonov has been in use since 1936, and the Tokarev since 1940.

Essentially the Russian 1891/30 rifle is a manually-operated

officially adopted by Russia as the Model of 1891 rifle. However, in spite of contract manufacture of the arm at Chatellerault in France, and in spite of extensive tooling up at Tula Arsenal, it was not until about 1895 that enough 1891s were on hand to permit their issue as the prime standard weapon.

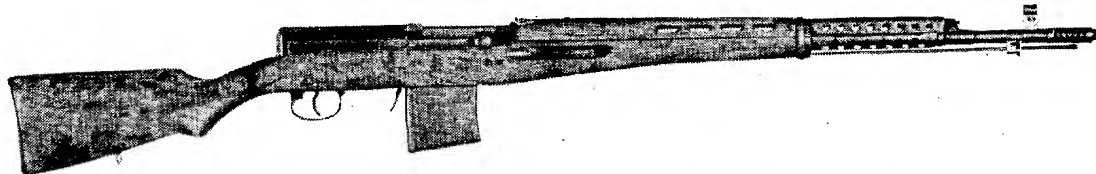
Russian rifles and carbines on the basic 1891 action have been produced in a variety of designs. In general, those made before the Red Revolution may be distinguished from those made subsequently by a receiver ring octagonal in section, later weapons having a round ring. Similarly, Soviet versions of the arm will generally have rear sights graduated in meters while early arms will be found to be sighted in paces.

Early versions of the arm include the original model 1891 rifle, a 52-inch arm with 31¼-inch barrel; the dragoon rifle of 1891, some three inches shorter in barrel and overall lengths; and the 1910 carbine, a 20-inch barrel arm used by machinegunners and artillerymen.

Other versions, such as the Models of 1894 and 1900 and the American-made (Remington) Model 1916, represent minor modifications of the original 1891 design. Earlier weapons used sling swivels attached to magazine box and upper band to attach the sling, but these swivels were subsequently abandoned in favor of slots through the stock to



Simonov 7.62 mm. rifle was Russia's first semiautomatic. Reportedly capable of fully automatic fire, the rifle is fed from a 15-round magazine



Tokarev model 1940 7.62 mm. semiautomatic rifle has shorter stock than 1938 model, metal handguard forward of stock, and six-vent muzzle brake

two-lug bolt action fed from a five-round in-line box magazine. Unlike most bolt-actions, in which the two locking lugs at the bolt-head are vertically opposed when the bolt is locked, the Moisin's lugs are horizontally opposed when locked, engaging locking shoulders within the receiver ring. This system offers certain advantages: for example, it is not necessary to cut away part of a locking shoulder to provide a feed ramp.

The magazine is refilled either with single rounds or from a five-round charger, and inclusion of an auxiliary interrupter reduces the likelihood of rim-over-rim stoppages or of the cartridge rim interfering with operation of multi-piece bolt.

The earliest version of the 1891/30 bolt-action rifle was adopted by a special committee appointed in 1883. New powders were either available or projected for the immediate future, new bullet designs and calibers being considered, and the use of magazine weapons was obviously only a matter of time. At first, attention was paid largely to the matter of a new cartridge and breech mechanism, but soon the inquiry was broadened to take in magazine systems.

Final contenders in the competition were the rifles of Sergei Ivanovitch Moisin (or Mosin, or Mouzin) and of the Nagant firm in Belgium. The arm which was ultimately selected used the Moisin breech mechanism combined with the Nagant magazine and charger-loading system. Using a rimmed, bottle-necked cartridge, caliber 7.62 mm., it was

accept straps to hold the sling . . . precisely when this change was made is not known, but it is believed to have taken place around 1914.

In common with other countries, Russia, when first turning to a smallbore rifle, adopted a long, round-nosed bullet. The cartridge case was substantially the '7.62 Russian' case we know today, a rimmed, bottle-necked one, but the bullet was a 210-grain projectile fired at 2,034 feet a second. With the improvement of 1908 came a pointed bullet of modern form weighing about 150 grains and driven at about 2,800 feet a second. This basic load was increased to around 2,854 feet a second by World War II.

A 'heavy ball' load was developed, something along the general line of our M1 load, with a bullet weighing 182 grains driven at 2,670 feet a second. This was identifiable by its yellow painted bullet nose. There was also a target (and perhaps small-game) load with half-mantled 69-grain bullet. In addition, of course, there were a great many other loads including tracers; armour piercing, tracer; armour piercing, incendiary; armour piercing, tracer, incendiary; armour piercing; high explosive, incendiary.

The first post-revolutionary Moisin of distinctive design was the Model 1924/27 carbine. This arm was shortly followed by the Soviet Model 1891/30 rifle, a modernized arm patterned after the original dragoon rifle with 28.5-inch barrel. During World War II a special short carbine was

brought out, and it is reported that the latest issue arm is a carbine with a permanently attached folding bayonet.

In general, these arms have all the beautiful characteristics of the Moisin-Nagants, including a noisy bolt whose handle seems to extend at least several feet to the right; but wartime experience with special rifles, designed for use with scope sights, whose handles were necessarily bent down, seems to have given the Soviets the idea that a bent bolt handle need not be summarily rejected.

Accuracy of the Moisin arms seems to be a debatable point. If you listen to the reports of some of their more rabid—or better indoctrinated—partisans, you will think that you are hearing about a substitute for a custom bull gun, but less prejudiced observers seem to feel that the weapons give, in general, just about service accuracy and no more.

On this point, A. Engelhardt's notes on the Russian performance at the 1912 Stockholm Olympics may shed some light. Because the point of impact varied according to whether or not the bayonet was fitted, the Russian team fired its course with fixed bayonets—and came in last. Further, he mentions that the Russians purchased a number of heavy-barrel target rifles from GECO some time after 1920, which they obtained at a very good price, the firm hoping thereby to secure a re-order: the Russians were then found to be making the guns themselves!

Soviet experience and experiments early dictated the adoption of a self-loading infantry arm. In 1936 the Simonov was taken up as a service weapon. Its complicated action—it had, for example, a two-part bolt whose lower section was engaged by a locking member in the receiver which was locked by the upper section of the bolt and unlocked by a moving slide above the barrel!—and its vulnerability to dirt, combined with the fact that a complete field-strip was practically impossible, caused it to be replaced in 1938. The Simonov did have a highly efficient muzzle brake, and it introduced into Soviet service the above-the-barrel nozzle-and-cup gas system which later proved so successful in the Tokarev

38s and 40s and in the German Gew 43/Kar 43 weapons.

With the adoption of the Tokarev 1938, an arm in whose design Simonov seems to have played a considerable part, the Russians secured an autoloading service weapon of superior design. Its tilting bolt, the rear end of which is cammed down into engagement with an internal locking shoulder by cams in the spring-loaded bolt cover plate, is remarkably simple and sturdy. When the arm is fired, gases tapped off through the gas nozzle drive back the gas cup and operating rod, forcing back the bolt cover, which lifts and retracts the bolt. A greatly simplified hammer and disconnector mechanism provides semi-auto fire, while a second sear, actuated by the tail of the bolt as it locks, ensures against premature discharge—and can quite easily be used to give full-auto fire with only minor changes in the trigger mechanism.

Experience with the Tokarev 38s apparently made an improved cooling system seem desirable. Along with other stock changes dictated by the need of simplifying manufacture, additional pierced metal handguards were provided. The 1940's muzzle brake, having six narrow vent slots on each side, was replaced around 1942 with a muzzle brake having two large ports on each side. This probably reduced the muzzle blast effect somewhat, in addition to being easier to make.

A curious little carbine on the Tokarev system was reportedly produced around 1940. Unlike the Tokarev rifles, whose four-foot overall length includes a 28.5-inch barrel, the carbine was only 39 inches overall.

Bayonet development paralleled that of rifles. The original bayonets, slightly modified in design to fit the 1891 rifles, were temporarily supplanted by the special knife bayonet required for the Simonov, muzzle brake of which was not considered adequate to support a bayonet. It gave way to the long Tokarev knife bayonet of 1938, replaced in 1940 by the short Tokarev knife. With the return to 1891-arms, the old bayonet was again brought in. Latest reports describe a folding bayonet mounted on the gun itself: that the original bayonet was designed to be reversed on the gun should not be forgotten.



A few recent 1891/30 Moisin-Nagant rifles have been noted with bolt handle bent for use with telescope sight (Sovfoto)

Reportedly, Tokarev rifles were entirely satisfactory in service so long as the temperature stayed within reason. German troops preferred Tokarevs to their own Mausers in summer. With the coming of cold weather—and the word 'cold' has a special meaning in Russia—Tokarevs began showing a tendency to 'freeze,' particularly in the gas system. A frost-proof oil was developed to combat this, but Tokarevs have not had the recent general issue which might be expected. This may be a ruse. Although it was reliably held that production and issue of Tokarevs was practically eliminated in 1942, a 1944 Tokarev has recently appeared . . . so perhaps the Tokarev is being held back for a special purpose.

With the purchase of an entire Zeiss plant, Russia found herself in a greatly improved position in the matter of producing optical equipment. An early result was the 4 power PE telescope sight, a heavy but effective unit. Mounted either in

a two-part mount on the left side of the Moisin receiver or in a monobloc mount on the receiver ring, the PE (and a turned-down bolt handle) transformed the 1891/30 into a good sniping weapon. A later telescope, the 3.5 power PU, was mounted either in a one-piece left-side mount on the Moisin or in a unique single-unit mount on the Tokarev series.

Both the PE and PU scopes have been illustrated mounted on the TOZ (Tula) .22 rifles, bolt-action single shot (TOZ8) and box-magazine repeating (TOZ9) rifles. These are unremarkable training and sporting arms, some of which are fitted with sling swivels in spite of the apparent Russian idea that the sling may also be wrapped right around the barrel.

As one curious note, the Russians in World War I imported and issued quantities of the old Winchester 1895 box-magazine lever-action rifle in 7.62 mm. caliber fitted with

the gun were developed on this basic system, among them the DA (aircraft gun) and the DT (tank). Extensive use of the arm demonstrated that the recoil spring, carried in a tube below the barrel around the piston rod, overheated and weakened during prolonged firing, and so a modernized version of the gun was introduced having its recoil spring in a tube at the rear of the receiver. Both the DP and the DT were thus modernized, becoming the DPM and the DTM. Oddly, unmodified DP guns and modified DTM guns have been found in Korea, many of the DTMs being used as ground-service machine rifles—some fitted with a scope and mount.

The Smith and Wesson Russian Model (variously described in European sources of the period as Model 1875 and Model 1878), .44 Russian caliber, was the first 'modern' handgun adopted by the Russians, although a Galand revolver is be-



Designer of several semiautomatic rifles and pistols, F. V. Tokarev, at age of 70, as he received the Gold Star 'Sickle and Hammer' and title of 'Hero of Socialist Labor' from M. Kalinin in November 1940 (Sovfoto)



Designer of PPSH 1941, George Shpaghin is reportedly chief designer of infantry weapons (Sovfoto)



Among arms invented by late V. A. Degtyarov was one of the best light machine guns ever built (Sovfoto)

military stock and a charger-guide over the magazine. That some of these were stored away is indicated by the report that one has turned up in Korea. The Russians also got considerable quantities of weapons in 7.92 mm. German service and in .303 British, especially Pattern 14s, before and during World War II.

The burden of rifle-caliber automatic fire in the Russian squad falls on the famous Degtyarov machine-rifles, the DP and DPM guns. Their inventor had a unique career: born in 1880, working at Tula in 1891, an enlisted man at Oranienbaum witnessing tests of foreign machine guns, back at Tula with Fyodorov developing the loadings for the 1908 improved cartridge—V. A. Degtyarov stands on a par with Maxim and Browning in the development of automatic weapons.

After the Soviet government was relatively firmly established, one of its first thoughts was to modernize its weapons. Earlier experiences with the Madsen machine-rifle had demonstrated the desirability of a weapon of this class. Early in 1924, Degtyarov undertook development of an automatic weapon, and late in that same year his brain-child was tested against the Maxim-Tokarev and the Maxim-Kolsenikov. The Degtyarov suffered breakages, and the Maxim-Tokarev was tentatively adopted for field tests.

When these tests disclosed that it would be necessary to redesign the Maxim-Tokarev action, which eliminated to a large extent its ability to use standard Maxim parts, a retest was ordered. Redesign of the Degtyarov had greatly improved it, and in new tests it easily outclassed the Maxim-Tokarev.

The basic action of the Degtyarov (locking flaps carried in the bolt whose rear ends are forced out to engage shoulders in the receiver) was adaptable, and several other versions of

lieved to have had some limited issue in the Russian Navy.

It was displaced by the Nagant adopted in 1895. Used in both single-action and double-action versions, this arm was designed around a peculiar cartridge whose bullet was entirely enclosed in its case. At the moment of firing, a movable breech-piece jammed the cartridge and cylinder forward so that a recess in the front of the chamber enveloped the rear end of the barrel as the cartridge mouth slipped into the barrel, thus providing a gas-tight joint. This arm had a solid frame without provision for simultaneous ejection, cartridges being loaded individually through a gate and being forced out by an ejector rod. The Nagant revolver's peculiar cartridge with the projectile fully enveloped in the case was not color-coded, but it is distinctive enough without any coding. The bullet weighs 105 grains and is nominally driven at around 900 feet a second (although H. P. White Co. reports a velocity of about 950 feet a second). Early tests indicated a velocity of 1,082 feet a second fired in the Nagant revolver—and 725 feet a second fired in a similar revolver lacking the Nagant's gas-check design.

Peiper of Belgium had produced in 1889 a somewhat similar obturating revolver with a crane and swing-out cylinder, but, curiously, the Peiper revolvers sometimes found in Russian service lacked both swing-out cylinders and obturating mechanism, although they resemble the Nagant closely.

The importation, reportedly by revolutionaries preparing for the 1905 uprising, into Russia of quantities of the Schwarzlose 1898 automatic pistols, 7.63 mm. Mauser caliber, gave the Empire its first good taste of what autopistols could do. Largely stopped at the border under stringent restrictions on the importation of firearms—the (Continued on page 46)



Merritt A. Edson

Marine General Merritt Edson Named NRA Executive Director

ONE OF THE Marine Corps' outstanding heroes of World War II has just been named to succeed C. B. Lister as Executive Director of the National Rifle Association. Major General Merritt A. Edson, whose record spans both a military career climaxed by the award of the Congressional Medal of Honor and long-time devotion to virtually every phase of the shooting game, was named to the Association's top administrative post on June 15, 1951. On that date, Edson handed his resignation as Commissioner of Public Safety to the Governor of his native state of Vermont and resigned as NRA President.

In taking over as the head of the NRA on July 1, General Edson will guide the activities of over 500,000 American civilian marksmen organized into more than 8,000 affiliated clubs from coast to coast. Also under his guidance will be the Basic Small Arms Training Schools now operating throughout the country and the junior program which each year teaches thousands of youngsters to handle guns safely. He will oversee the American target shooting game.

Edson was born in Rutland, Vermont, on April 25, 1897, and attended the University of Vermont. During the summer of 1916 he served on the Mexican Border with the Vermont Infantry (National Guard) and, at the outset of World War I, enlisted in the United States Marine Corps. He was commissioned a second lieutenant in the regular service on October 9, 1917.

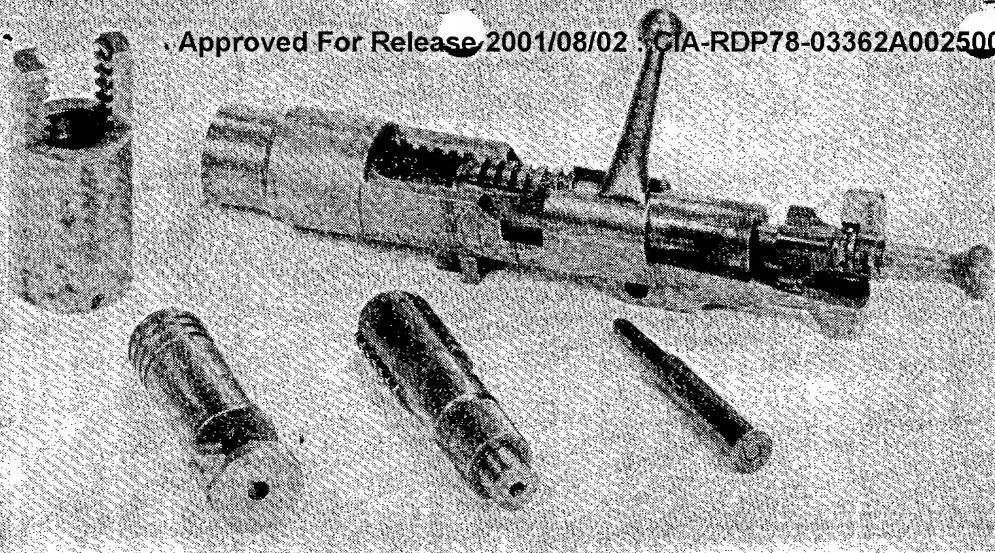
Between the wars, Edson served at Quantico, Virginia, as a flyer at the Naval Station on Guam, at sea aboard the USS Denver and Rochester, and as commanding officer of Marine patrols in Nicaragua, for which he was awarded his first Navy Cross. From September 1929 to 1931, he served as an instructor at the Marine Corps Basic School in Philadelphia. In the late 'thirties, Edson served in Shanghai, where he picked up much of the knowledge of the Orient which he used so successfully during World War II.

In June of 1939 Edson was assigned to Headquarters, Marine Corps, as officer in charge of all target practice. Throughout his service career, Edson had been closely associated with shooting. From 1931 to 1934 he was Ordnance Officer at The Marine Corps Depot of Supplies, Philadelphia, in charge of all ordnance procurement for the Corps. He was a firing member of Marine Corps teams (1921), assistant team coach (1927, '30, '31), Marine Corps team coach (1932), and team captain (1933). Upon resumption of the National Matches in 1935, he captained the Marine Corps national rifle and pistol teams of 1935 and '36 which carried off top national honors for both years.

General Edson's service during World War II is well known. In the first American offensive of World War II, Edson commanded both the First Marine Raider Battalion and the Second Battalion, Fifth Marines, in the landing on Tulagi, in the Solomon Islands, on the morning of August 7,

1942. General Edson's forces captured the island after two days of fighting. In early September 1942 he commanded the raid on Tasimboko, on Guadalcanal, and in September he conducted the defense of Henderson Airfield. One action followed another: Guadalcanal; Tarawa; Saipan; Tinian. As a result of recommendations incident to his conduct during the battle of Tarawa, he was promoted to brigadier general late in 1943. On December 16, 1945, Edson was ordered to Washington, D. C., having completed almost forty-four months of continuous duty in the Pacific theater, the longest continuous overseas assignment of any Marine Corps officer during the war. In 1947 Edson retired with the rank of major general, and accepted the executive and administrative post of Vermont's first Commissioner of Public Safety.

In 1948 Edson was elected vice-president of the National Rifle Association and in the following year, president. His selection as executive director of the NRA by the Association's Board of Directors came as the climax of an extensive search to fill the vacancy created by the tragic death of C. B. Lister (RIFLEMAN, June, page 10). Edson comes to the NRA with a lifelong acquaintance with shooting behind him, and a keen appreciation of the problems facing the NRA as a result of today's tensions and uncertainties. Edson has been a Life Member of the NRA since August 22, 1933, and a member of the Board of Directors and the Executive Committee since September 1939. ♦♦♦



Improved Hamburg action with screw bolt made by Niedner in 1913 was single shot for high-velocity cartridges. Unfinished action, shown here with original gauges and .25 Krag cartridge, made by Niedner, are in collection of M. G. Van Way

Shushan, New York, in May 1912, when the rifle was new. Dr. Mann wanted to see what the long Krag .25 caliber cartridge would do on woodchucks, so at his request I made up a rather plain stock in a hurry, but the rifle was bedded right. I put double set triggers on the rifle and a 16-power telescope sight. It weighed 11½ pounds, which was heavy for a hunting rifle, but the weight made it hold nicely for shooting offhand. The first chuck I shot at was about 220 yards away. I saw him tumble when I fired, but Dr. Mann and Dr. Baker said I missed him. So I went up and got the chuck and carried it back to show them. The bullet had smashed it up so I had to carry it in both hands. Dr. Baker took one look and said, "That is a hamburg making rifle."

During that trip to Shushan I fired several targets with the Hamburg rifle. One group of 21 shots, one sighter and 20 for record, fired at 200 yards from the prone position, measured 2-11/16 inches vertically and 2-3/32 inches horizontally. The target was made with a load of 45 grains of Lightning and the 101-grain bullet in the long Krag case we used until August of 1913. Another target was fired at the same time for Dr. Mann with the Hamburg rifle and the load mentioned above. He had me hold on center and pay no attention to a 15-mile-an-hour wind that was blowing across the line of fire. The range was 200 yards. Fired from a prone position, the group strung out 3-7/16 inches with the wind but measured only 1-3/16 inches vertically. I thought it was pretty good shooting.

The Hamburg action was a single shot, lighter in actual weight than the Springfield but a lot stronger. Most of the weight was in the front part of the receiver, where it is needed. The bolt is 7/8 inch in diameter, weighs about 13 ounces, and has two wide locking lugs on opposite sides of the bolt head. The bolt head fits up into the chamber behind and around the rear of the cartridge case. That is the way a bolt action should fit; there is no reason to leave the head of the cartridge sticking out of the chamber unsupported on the sides. Recently Remington has come out with a very strong action on their Models 721 and 722 using that type of bolt. The Hamburg action was made with a one-piece extractor separate from the bolt but operated by it. Sliding in a groove in the bottom of the receiver, it will extract a case as positively as a ramrod pushed down the barrel. The firing pin is separate, screwed onto the cocking piece of the bolt. It cannot be blown out.

The original barrel was 34 inches long and rifled, with six lands and grooves, one turn in twelve inches. At first, the Hamburg was chambered for a special long Krag case necked down to .25 caliber. Dr. Mann had secured about 500 unnecked, untrimmed Krag cases from a government arsenal and I made up some of these in various body and neck lengths and with different shoulder angles. After

considerable experimenting, I chambered the Hamburg rifle for a shell that was 2-¾ inches overall in length with a ¼-inch neck. The next year, 1913, we decided to use the regular Krag case necked down to .25 caliber as results with it were just as good as with the longer case, and using the regular Krag case simplified the problem of making cartridges. In August of 1913 the Hamburg rifle was rechambered for the shorter Krag case and the barrel was shortened to 27½ inches at that time.

During these experiments with the .25 Krag cartridge, as it has been called, we used 86-, 90-, 101-, and 103-grain bullets with both cases. For the Hamburg rifles these bullets were made from commercial, soft-point, jacketed, 117-grain .25 caliber bullets by swaging them in a series of different dies. There was a point shaping die, a body die, and one that formed the base band. The base band was 1/16 inch wide and the bullet was seated in the neck of the case about 3/16 inch. The base-band bullet chambers were throated 60 degrees.

To prevent erosion in the bore of the Hamburg rifle two wax wads with graphite lubricant between them, or a mixture of vaseline and graphite, were loaded in the cases behind the bullet. I fired close to 20,000 rounds through the original barrel and when I sold the rifle to R. S. Hill a few years ago it was still capable of making good groups.

Harry Pope was present when we were taking the trajectory of the .25 Krag cartridge in the Hamburg rifle on Dr. Mann's 200-yard range. The mid-range trajectory measured 1.60 inches. When Harry saw that he said, "Niedner, you will soon be getting the up curve instead of down curve."

The Hamburg rifle was a great woodchuck gun. I used it on many hunting trips and my old records show I killed as high as thirty-four chucks in one day with it. When I held on one up to 300 yards, he was mine.

The United States Cartridge Company, in 1912, advertised the .28 Ross cartridge at 3,000 feet a second. During a conversation with Mr. Butler of that company he told me that the velocity wasn't actually 3,000 feet a second but so close to it that the Company advertised the .280 Ross at that speed anyway. Sir Charles Ross, who designed the Ross rifle and cartridge, had made some enthusiastic claims for his rifle and cartridge in England and America. The .280 Ross cartridge, according to some English catalogs of that time, had a muzzle velocity of just over 3,000 feet a second with a bullet of about 140 grains. The Ross rifle, a straight-pull bolt action, had been adopted by the Canadian government. Dr. Mann got one and we examined it, but it had some serious faults and was a dangerous gun so we got rid of it.

Mr. Butler knew I was doing a lot of work on high-velocity cartridges. When he (Continued on page 50)

Russian SMALL ARMS

(Continued from page 13)

few which did get in being captured when the revolution went sour—and reissued as police weapons, the Schwarzloses undoubtedly played a major part in establishing the caliber of Russian pistols and submachine guns.

After World War I, when the Germans found themselves unable to manufacture pistols of 9 mm. caliber and further found themselves without a satisfactory domestic market, they quite naturally sought markets abroad for their weapons, and the Mauser Model 1920 using its standard 7.63 mm. cartridge was immediately taken up by the Russians. They bought so many of this model that it became known as the Bolo Mauser, and by 1929 the British Textbook of Small Arms was able to report that the Nagant had been almost entirely superseded by its automatic rival.

The autopistol load, in a case practically identical with that of the 7.63 mm. Mauser, is an 86-grain jacketed bullet at 1,377 feet a second. H. P. White Co. lists a similar Russian load at 1,492 feet a second. A green-nosed tracer load and a black-red coded armour-piercing, incendiary load are also known, undoubtedly intended mainly for use in the several Russian submachine guns.

Even the subsequent adoption of the Tokarev 30, a small, Browning-type autoloading pistol using the 7.63 mm. Mauser cartridge, by now known as the 7.62 mm. Russian autopistol cartridge, did not, however, entirely displace the Nagant. A small production lot of Nagants in .22 rimfire was run off around 1935, and World War II saw Nagants by the caseful being hauled out and issued.

As for the Tokarev 30, its career has been somewhat pathetic. It appeared on the scene just a little too late for very extensive use, and the general issue of machine pistols throughout the Soviet army has almost completely forced it aside. Soviet machine pistols, particularly of the 1941 and 1942/43 patterns, have become practically universal weapons in the Soviet Army.

The adoption of machine pistols or submachine guns into various European services is now generally considered to have

resulted from studies of the use of such weapons by Bolivian and Paraguayan forces during the South American Gran Chaco War. Adoption by Belgium and Austria in 1934 of the Bergmann and Steyr-Solothurn guns, and by Germany of the BMP34 and MP38, was certainly helped along by the demonstrated effectiveness of such arms as the Bergmann 1918, Vollmer, and Schmeisser. It would appear that Russia drew similar conclusions at the same time, since she adopted the Model 34/38, an entirely conventional little pistol carbine, caliber 7.62 mm. Russian armour piercing, with a cyclic rate (900 RPM) much too high for its 25-round box magazine.

Quite probably Russia's early experiences with this arm were not encouraging, which might explain why there were so few submachine guns available to Russian troops during the invasion of Finland. Finnish Lahti-designed Suomi pistols with their 71-round drums and low cyclic rates took a terrible Russian toll—and the Russians learned fast. As an initial step, they seem to have produced a drum magazine for the 34/38.

In 1940 they brought out the PPD (Degtyarov), a simplified but still conventional machine pistol with a large-capacity drum. It was shortly superseded by the PPS (Shpaghin) 1941, which was not conventional. The upper and lower halves of the pressed-metal receiver of this arm are hinged together in front of the magazine well; release of a catch at the rear of the receiver makes it possible to tip up the rear of the upper half, making all the working parts and the barrel instantly accessible for cleaning.

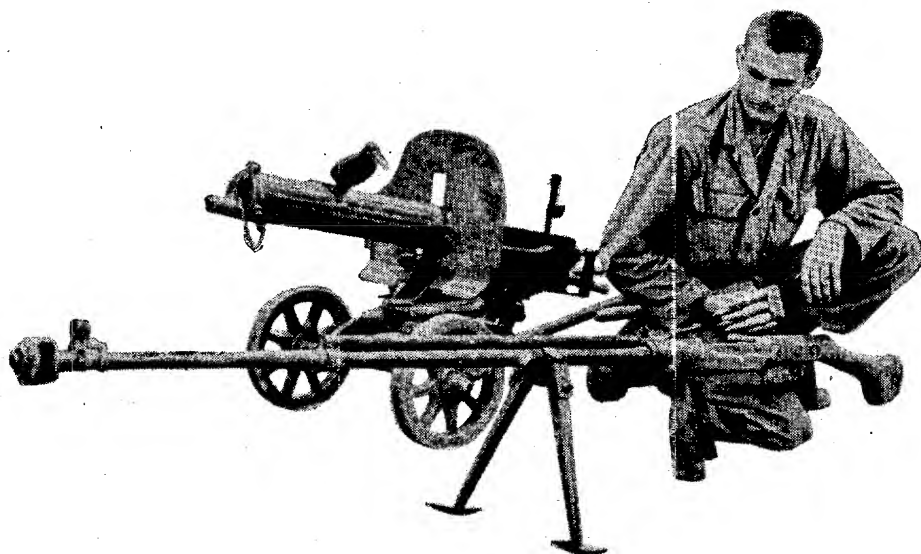
Late-pattern 1941s—and PPS guns are known to have been in production as recently as 1950—have been strengthened around the magazine slot but otherwise appear unchanged. The original 71-round drum has been retained, a 35-round special box magazine which came out late in World War II is still in service, and the arm is as cheap and as deadly as ever.

A similar weapon was brought out in 1942 as the PPS (Sudarev). Closely resembling the PPS in action, it lacked the cocking handle slide safety of the PPD and PPS, had an added pistol grip, and substituted a folding stock for the wooden fixed stock on the earlier guns. It used a 35-round box magazine. Originally the PPS receiver and barrel guard were made in two pieces and assembled and the long folding buttstock saddled its shoulder-piece around the ejection port

when folded, the gun weighing 7¼ pounds. However, in 1943 a redesigned PPS appeared with a one-piece barrel guard and receiver and a shortened folding stock, its weight being reduced to about 6½ pounds. This arm has not been reported from Korea. Extensively issued to Guards battalions, which were mostly converted airborne units, during World War II, the arm is now seen in parades of airborne infantry in Moscow.

Although these arms are all extremely simple blowback-operated weapons, they represent perhaps the deadliest sort of light infantry armament. Properly issued and used in association with rifle-caliber and heavier weapons, the machine-pistol is uniquely fitted for its job.

Although the Russians experimented with and issued two versions of their 12.7 mm. anti-tank rifle, a bolt-action weapon patterned after



Pfc Howard Jameson, USA, examines a PTRS 1941 anti-tank rifle which was captured with 1910 Maxim machine gun in Korea last year (U.S. Army photo)

the German T-Gun of World War I, they dropped it as ineffective in 1939. Available both as a single-shot and as a box-magazine repeater, fitted with bipod and muzzle brake, this arm represented one solution to the problem of the one-man anti-tank weapon. The Poles brought out their Mareszek (or Maseczek?) super-high-velocity 7.92 mm. rifle, the Germans developed the PzB38, PzB39, and M-SS-41; along the same general projectile theory, the British came up with the .55 Boys—and the Russians dropped their gun.

In 1941 they came out with two weapons firing the remarkably effective 14.5 mm. Russian anti-tank rifle cartridge. One of these weapons, the PTRS1941, designed by Simonov, is nothing more than a scaled-up version of the Tokarev rifle. Its 44 pounds was considered too much of a load for one man, so removal of one key permits the gunner and loader to break the gun into two sections for transport.

The other gun, the PTRD1941, Degtyarov designed, is a thoroughly remarkable arm. Outwardly it appears to be no more than an extremely massive bolt-action mechanism fitted with a long barrel and a buffered stock. When the arm is fired, the entire gun except for the rear of the buttstock recoils. Fitted to the non-recoiling section is a fixed cam which intercepts the bolt handle. As the recoiling parts move to the rear, the cam forces the bolt handle and bolt to the unlocked position. If, as is urgently recommended, the gunner has used only clean and lightly greased ammunition, the bolt then slides fully open, completing extraction and ejection of the cartridge case.

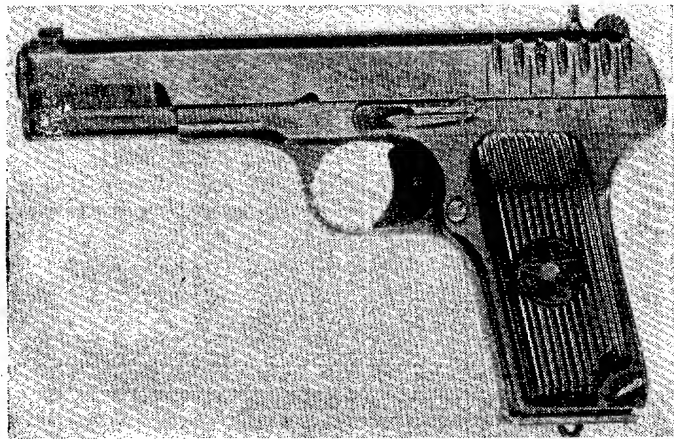
Both of the 1941 anti-tank rifles have appeared in Korea. They created quite a stir in the newspapers—mystery weapons and all that—but it would appear that their use was not profitable enough to the North Koreans. At any rate, they are not longer reported in extensive use.

The trend in Soviet service, in anti-tank weapons for the individual soldier and squad, has been almost entirely the reverse of the trends noted in other countries. The Red Army had a heavy shaped-charged anti-tank grenade but adopted the anti-tank rifles of 1941 firing armour-piercing projectiles. In contrast, the British went from their .55 Boys rifle to the Piat projector. The Germans discarded, to a material extent, their PzB 38 and 39 and M-SS-41 anti-tank rifles in favor of the 8.8-cm RkPzB 43 and 54 and the Panzerfaust 30 and 60, even converting many of the PzB39 rifles to fire grenades. We dropped our reliance on the .50 caliber machine gun as an anti-tank weapon and turned to shaped-charge rifle grenades and the bazookas.

Ammunition for the unsuccessful anti-tank rifles dropped in 1939 gave ballistics practically identical to those of the heavy machine gun cartridge. The 12.7 mm. anti-tank load delivers a projectile weighing 801 grains at a muzzle velocity of 2,821 feet a second.

The 14.5 mm. anti-tank rifles of 1941 used a much more potent load. The basic load for this arm was a 963-grain 14.5 mm. steel-cored bullet with incendiary composition between the jacket nose and core. A load of 471 grains of powder gave it an estimate muzzle velocity of 3,200 feet a second. Another load, believed to have a carbide core, put 487 grains of powder behind a 991-grain projectile to give it 3,280 feet a second muzzle velocity. (This also included an incendiary composition in the bullet nose.) The cartridge case was a large, rimless, and sharply bottlenecked affair.

In general, Russian development of weapons for the individual soldier has reflected an extremely realistic state of mind on the part of Russian (Czarist and Soviet) arms designers and military technical authorities. The PPS 1941 and the PPS 1942 and 43 represent something rather close to the ultimate in small arms simplicity. The Degtyarovs, both the older patterns and the more recent 'modernizations', are light



Tokarev 1930 pistol in 7.62 mm. caliber is short recoil operated Browning type with eight-round magazine. It measures 7 3/4 inches overall

machine guns of the highest possible grade. (It might be noted, merely in passing that the present Soviet medium machine gun—the 1943 Goryunov—is very possibly the best thing of its kind in service today.)

It is hard to try to evaluate satisfactorily the Moisin-Nagant series of rifles. Any brief description of them must necessarily first take note of the fact that they are clumsy, not particularly easy to handle, accurate only to the extent required of a general-service rifle around the turn of the century and, at first glance, generally inferior. Then you come up solidly against the fact that these rifles have been in service without major modification for sixty years. They have outlasted two semi-automatic rifles. They have seen service in climates from those of the deserts of central Asia to those of the 'regions of eternal frost'. So take the gun for what it is—no beauty-contest winner, but a weapon which has proved its worth many times, a rifle which has won and kept a place in the service of a country which has frequently demonstrated a willingness to drop any weapon which doesn't measure up.

As for marksmanship within the Soviet Union, the activity of Osoaviakhim—part of which is now known as Dosav—in training Soviet citizens in the use of small arms is well known, and the abilities of the marksmen who went into service from the "Soviet Union of Hunters" were amply demonstrated to—and on—the Nazis and their allies.

Organized in 1927, Osoaviakhim counted twenty million members in 1939, almost thirty percent of whom were women. The record of the accomplishments of the organization is remarkable, showing of what value trained civilian riflemen may be to a nation in time of war. During World War II Osoaviakhim was ordered to form a mass of trained reserves for the army, navy, and air force. Several million Russians received instruction in auto and anti-tank weapons. The organization also formed a corps of defense wardens, contributing 15,000 active members to cadres of partisan detachments. Stalin, in outlining the function of Osoaviakhim during World War II, said in 1941: "In territories occupied by the enemy we must organize units of sharpshooters on horseback and afoot, as well as groups of partisans, to fight the enemy units, to take up guerilla warfare everywhere, to blow up bridges and roads, to cut telegraph and telephone wires, to burn woods, supply depots and foodstuffs." Members of Osoaviakhim formed the guerilla units which harassed Germans during their invasion of Russia.

The Soviets have taken a realistic approach to the matter of weapons and their use. Government sponsorship—and that word, too, has a special meaning in the Soviet Union—of Osoaviakhim, Dosav, Ohkot Soyuz, and other civil defense organizations makes our own national record look very sad indeed.

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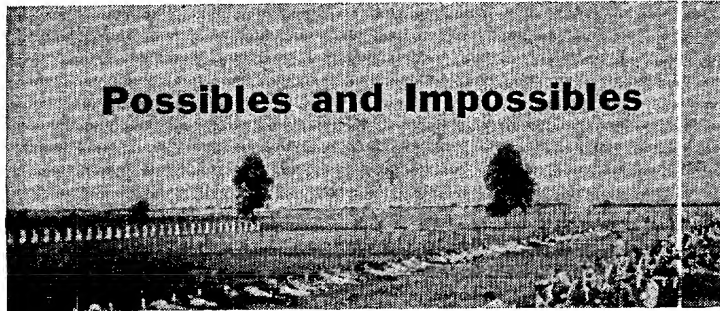
A PAPER FOR PEOPLE WHO SHOOT

Rifle *Remi* QU

VOL. 14, NO. 7

BRIDGEPORT, CONNE

Possibles and Impossibles



Just recently we returned from a tour which took in the Pacific coast, the inter-mountain area and Texas. It was a wonderful opportunity to see and talk with many of our old friends—and we made the most of it.

Our first stop was at the Los Angeles Rifle and Revolver Club, where we attended the Pacific Coast Small Bore Championship Matches. This club can really be proud of its modern, 112-point range.

From there we went on to San Francisco and took advantage of the opportunity to look over the ranges to be used in the National Rifle and Pistol Matches this Fall. Now that we've seen these fine ranges we can hardly wait until the important day when the range officer gives his first command to "Commence Firing."

Portland, Oregon, was our next stop. There were no matches scheduled while we were there, so we spent some time looking over their new indoor range. Every member of this club deserves credit for the personal efforts expended in making the range and lounging rooms second to none.

Not to be outdone by their neighbors in Portland, Seattle and Spokane have new outdoor ranges under construction. When these ranges are completed they will be as fine as any in the United States. Both clubs already have the "Welcome" mat out. As they put it: It won't make any difference what kind of rifle the shooter has—there'll be a place for him to shoot.

In Montana, we visited many fine ranges, both indoor and outdoor—and made a special stop at the splendid Anaconda layout which will once again be host at the Regional. Even in Mon-

tana, with its vast, open territory, shooters like the sport of organized matches. Any shooter who enters a match in Montana will soon find that he's up to his ears in tough competition.

Our next stops were at Denver and Lafayette. Denver shooters will soon have a new range. It was under construction when we arrived. Lafayette will be the scene of the Regional this year. After looking over the range we feel sure that shooters who plan on attending the Regional will find things to their liking.

Last stop, Dallas — for the Southwestern. It was nice to visit the home town again, but after ten years things had changed so much we had to watch our step to keep from getting lost.

It was a pleasant trip, and one we will remember through the years to come. It was fun to attend the shoots, and to see so many new ranges springing up. But most of all we were glad to see those old friends who have given unstintingly of their own time so that others may enjoy shooting.

A smooth-running, successful Rifle Match is generally the result of careful planning, not chance. Before your next big shoot, read the National Rifle Association's Competitions Bulletin No. 2 and learn the steps necessary in conducting a successful Rifle Match. In this bulletin you will find tips on the duties of officers, conduct on the firing line, management of the office, and how to get newspaper and radio publicity.

To obtain a free copy of this bulletin, write to Shooting Promotion Section, Remington Arms Company, Inc., Bridgeport 2, Connecticut, and ask for the "National Rifle Association's Competitions Bulletin No. 2."

JULY RIFLE F VENISON

HUNTERS' CORNER

Texan Fires Once, Bags Half-Ton Elk

Abilene, Texas, July, 1951—Bob Rankin of the A-Bar Ranch has two trophies after his last hunting trip. One is a half-ton bull elk; the other weighs less than half an ounce.

Rankin was riding in a forest 40 miles northeast of Jackson Hole, Wyoming, when he heard the elk bugling. Dismounting, the Texan took his Remington bolt action Rifle and crawled through tangled undergrowth until he saw the hulking animal.

Rankin fired just one shot, from a kneeling position. The big bull dropped to the ground, an instant kill under the impact of a 30-06 Remington "Core-Lokt" bullet.



Rancher Rankin's bullet.

Examining his prize, Rankin found that the



Texas rancher Bob Rankin stands beside 1000-pound elk he shot in Wyoming.

bullet had entered at the junction of shoulder and neck, and had emerged just under the hide. That mushroomed bullet is the rancher's second trophy. He writes that he is keeping it as a memento of the amazing stopping power of Remington "Core-Lokt" bullets.

AROUND OUR CLUB The Contortionist

